REMARKS

Overview of the Office Action

Claims 1-14, 16-18, 20-34, 36-39, and 41-44 have been rejected under 35 U.S.C. §102(e) as anticipated by U.S. Patent No. 6,687,209 ("Ota").

Claims 15, 19, 35, 40, and 45 have been rejected under 35 U.S.C. §103(a) as unpatentable over Ota.

Status of the claims

Claims 1-45 remain pending. Claim 1 is amended to correct a typographical error.

Rejection of claims 1-14, 16-18, 20-34, 36-39, and 41-44 under 35 U.S.C. §102(b)

The Office Action states that Ota teaches all of Applicants' recited elements.

Independent claim 1 recites an optical element that includes "an optical path difference giving structure arranged on an optical surface of at least one of the plurality of diffracting ring-shaped zones, for giving a prescribed optical path difference to a prescribed light beam passing through the diffracting ring-shaped zone", which Ota fails to teach or suggest.

The Examiner cites Fig. 1, element (13a) as teaching an optical path difference giving structure arranged on an optical surface of at least one of the plurality of diffracting ring-shaped zones for giving a prescribed optical path difference to a prescribed light beam passing through the diffracting ring-shaped zone. Applicants disagree.

Ota discloses an objective lens that is used for recording and/or reproducing information for two types of information recording media (CD and DVD). In the objective lens of Ota, areas that do not include a diffractive structure (i.e., areas having refractive surfaces) are provided on

one optical surface to sandwich an area that does include a diffractive structure.

The objective lens (10) of Ota includes a refracting interface (11), a diffractive ring-shaped zone (13), and a refracting interface (12) (see col. 22, lines 19-31 of Ota). The objective lens (10) of Ota further includes a step portion (13a) that is disposed at the boundary between the refracting interface (11) and diffractive ring-shaped zone (13) (see col. 23, lines 25-26 of Ota). In other words, the step portion (13a) is not on or in the diffractive ring-shaped zone (13).

Light passing through the refracting interfaces (11, 12) of Ota suffers significantly less loss than the light passing through the diffractive ring-shaped zone (13) (see col. 22, lines 44-52 of Ota).

By providing the step portion (13a) at the boundary between the refracting interface (11) and diffractive ring-shaped zone (13) as shown in Fig. 1 of Ota the phase shift between the light flux passing though the refracting interface (11) and diffractive ring-shaped zone (13) is suppressed (see col. 23, lines 25-42 of Ota). By providing the step portion (23a) at the boundary between the refracting interface (22) and diffractive ring-shaped zone (23) as shown in Fig. 6 of Ota the Strehl ratio is enhanced (see col. 23, line 66 to col. 24, line 1 of Ota).

Therefore, Ota fails to teach or suggest an optical element that includes "an optical path difference giving structure arranged on an optical surface of at least one of the plurality of diffracting ring-shaped zones, for giving a prescribed optical path difference to a prescribed light beam passing through the diffracting ring-shaped zone", as recited in Applicants' claim 1.

In contrast to Ota, according to Applicants' recited invention, the objective lens (10) includes a diffractive structure (20), which has a plurality of blade-shaped diffracting ring-shaped zones (21). The optical surface of each diffracting ring-shaped zone (21) of Applicants' recited invention is formed to arrange a structure (22) that has a diffracting function in the

diffractive structure (20). Applicants' recited objective lens (10) also includes an optical path difference giving structure (30), which is arranged on the optical surfaces of the diffracting ring-shaped zones (21) and gives a prescribed optical path difference for a light beam passing through each structure (22) having a diffracting function. The surface of the optical path difference giving structure (30) forms a stepwise discontinuous surface composed of a plurality of divided surfaces (31) (see paragraph [0205] and Figs. 2 and 3C of Applicants' specification. Applicants' recited invention provides no refractive interface on either side of the diffracting ring-shaped zones (21), as taught by Ota. Consequently, there is no boundary between the diffracting ring-shaped zones (21) and some other surface or interface.

Thus, it is clear that Applicants' recited optical path difference giving structure (30) is on an optical surface of at least one of the plurality of diffracting ring-shaped zones (21), while the step portion (13a) of Ota is disposed at the boundary between the refracting interface (11) and diffractive ring-shaped zone (13).

In view of the foregoing, Applicants submit that Ota fails to teach or suggest the subject matter recited in Applicants' amended independent claim 1. Accordingly, claim 1 is deemed to be patentable over Ota under 35 U.S.C. §102(b).

Claim 36 recites limitations similar to claim 1 and is, therefore, deemed to be patentably distinct over Ota for at least those reasons discussed above with respect to independent claim 1.

Dependent claims

Claims 2-14, 16-18, 20-34, 37-39, and 41-44, which depend from independent claims 1 and 36, incorporate all of the limitations of the respective independent claim and are, therefore, deemed to be patentably distinct over Ota for at least those reasons discussed above with respect

to independent claims 1 and 36.

Rejection of claims 15, 19, 35, 40, and 45 under 35 U.S.C. §103(a)

The Office Action further states that Ota Applicants' recited elements.

Ota has been previously discussed and does not teach or suggest the invention recited in Applicants' independent claim 1.

Claims 15, 19, 35, 40, and 45, which depend from independent claims 1 and 36, incorporate all of the limitations of the respective independent claim and are, therefore, deemed to be patentably distinct over Ota for at least those reasons discussed above with respect to independent claims 1 and 36.

Conclusion

In view of the foregoing, reconsideration and withdrawal of all rejections, and allowance of all pending claims is respectfully solicited.

Should the Examiner have any comments, questions, suggestions, or objections, the Examiner is respectfully requested to telephone the undersigned in order to facilitate reaching a resolution of any outstanding issues.

Respectfully submitted,

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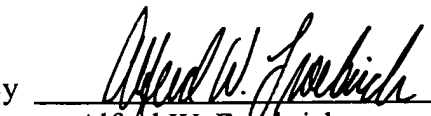
By 

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